

US EPA ARCHIVE DOCUMENT

EMISSIONS FROM UNPAVED ROADS (AP42 13.2.2, 11/06)

$$E \text{ (lb/VMT)} = k(s/12)^a(W/3)^b \quad \text{Equation (1a), pg. 13.2.2-4.}$$

TRUCK TRAFFIC

Constant	PM2.5	PM10	PM*	
k	0.15	1.5	1.5	Table 13.2.2-2
a	0.9	0.9	0.9	Table 13.2.2-2
b	0.45	0.45	0.45	Table 13.2.2-2
s	6	6	6	Actual – local conditions
W	27	27	27	Actual – local conditions
E (lb/VMT)	0.216	2.16	2.16	

*Assumed PM is same as PM10

Proposed Allowable Emissions:

$$\text{VMT} = (100,000 \text{ tons/yr})(\text{load}/22 \text{ tons})(0.75 \text{ mi/load}) = 3409 \text{ miles}$$

$$\text{PM}_{2.5} = (0.216 \text{ lb/VMT})(3409 \text{ mi})(\text{ton}/2000 \text{ lb}) = 0.37 \text{ tons}$$

$$\text{PM}_{10} = 3.7 \text{ tons}$$

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LOADER TRAFFIC

Constant	PM2.5	PM10	PM*	
k	0.15	1.5	1.5	Table 13.2.2-2
a	0.9	0.9	0.9	Table 13.2.2-2
b	0.45	0.45	0.45	Table 13.2.2-2
s	6	6	6	Actual – local conditions
W	40	40	40	Actual – local conditions
E (lb/VMT)	0.258	2.58	2.58	

*Assumed PM is same as PM10

Proposed Allowable Emissions:

$$\text{VMT} = (100,000 \text{ tons/yr})(\text{load}/10 \text{ tons})(0.09 \text{ mi/load}) = 900 \text{ miles}$$

$$\text{PM}_{2.5} = (0.258 \text{ lb/VMT})(900 \text{ mi})(\text{ton}/2000 \text{ lb}) = 0.12 \text{ tons}$$

$$\text{PM}_{10} = 1.2 \text{ tons}$$

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EMISSIONS FROM STOCKPILES (AP42 13.2.4, 11/06)

$$E \text{ (lb/ton)} = k(0.0032) * [(U/5)^{1.3} / (M/2)^{1.4}]$$

Equation (1), pg. 13.2.4-4.

STOCKPILES

Constant	PM2.5	PM10	PM*	
k	0.053	0.35	0.35	Table on pg. 13.2.4-4
U	5	5	5	Actual – local conditions
M	5	5	5	Actual – local conditions
E (lb/ton)	4.70E-5	3.10E-4	3.10E-4	

*Assumed PM is same as PM10

Proposed Allowable Emissions:

PM2.5 = (4.70E-5 lb/ton)(100,000 tons/yr)(ton/2000 lb) = 0.002 tons

PM10 = 0.016 tons

PM = 0.016 tons